

PATENT COOPERATION TREATY

REC'D 25 JAN 2005

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From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/019980

International filing date (day/month/year)
21.06.2004

Priority date (day/month/year)
20.06.2003

International Patent Classification (IPC) or both national classification and IPC
C04B28/02, E04D1/04, E04D1/16, E04D1/30

Applicant
JAMES HARDIE INTERNATIONAL FINANCE N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/019980

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

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Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/019980

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application,
- ☒ claims Nos. 1-16 (all in part), 17-21, 22-25 (all in part), 26

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 1-16 (all in part), 22-25 (all in part) are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for the whole application or for said claims' Nos. 17-21, 26
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.
- ☐ See separate sheet for further details

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-16,22-25

Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-3,5-10,22-24
Inventive step (IS)	Yes: Claims	
	No: Claims	4,11-16,25
Industrial applicability (IA)	Yes: Claims	1-16,22-25
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/US2004/019980

Re Item III.

Claims 1 to 16 as well as 22 to 25 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved (namely: 1) ratio or modulus of rupture (MOR) to modulus of elasticity (MOE); 2) density; 3) nailability and 4) resistance to stress induced cracking), which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

Re Item IV.

The separate inventions are:

invention 1 (claims 1-16 and 22-25):

cementitious composition comprising a hydraulic binder, fibres, aggregate, lightweight aggregate and a waterproofing agent as well as roofing article derived from said composition and method for preparing said article

invention 2 (claims 17-21 as well as claim 26):

roofing article comprising two roofing tiles connected to each other

They are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:

The common feature is a cementitious roofing article, which is however known from various documents (i.e. WO 02/32830).

The corresponding special technical features are considered to be:

- 1) a lightweight roofing article, which is nailable without cracking
- 2) a roofing article for covering hip or ridge, which is universally adaptable to different angle profiles

The two inventions are therefore not linked by a common special technical feature.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/US2004/019980

Re Item V.

1. The following document is referred to in this communication:

D1: WO 02/32830 A (HARDIE JAMES RES PTY LTD) 25 April 2002
D2: WO 02/28795 A (HARDIE JAMES RES PTY LTD) 11 April 2002
D3: WO 02/28796 A (HARDIE JAMES RES PTY LTD) 11 April 2002
D4: GB-A-2 148 871 (PILKINGTON BROTHERS PLC) 5 June 1985
D5: EP-A-0 173 553 (MARLEY ROOF TILE) 5 March 1986
D6: US 2003/054123 A1 (BLACK ANDREW J ET AL) 20 March 2003.

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1 to 3, 5 to 10 as well as 22 to 24 is not novel in the sense of Article 33(2) PCT.

- 2.1. The document D1 discloses (cf. the search report; the references in parentheses applying to this document):

A fibre cement composite comprising 25-45% cement, 30-70% fine ground silica, 0-50% density modifiers, 5% additives and 2-20% fibres (page 13; lines 1 to 8). As the additives may include also waterproofing agents (page 12; lines 4 to 9), the subject-matter of claim 1 can not be considered to be novel over D1. As D1 furthermore explicitly mentions roofing applications (page 12; lines 18 to 21), which are prepared by mixing, shaping a green body and curing said body (page 15; lines 1 to 29) also claims 7 and 22 are not novel in light of D1.

D1 also discloses the use of viscosity modifiers, pigments, silicones, stearates and further fillers such as calcium carbonate (page 9; line 27 and page 12; lines 4 to 9) together with cellulose fibres optionally blended with synthetic fibres (page 12; lines 13 to 17), which falls into the scope of dependent claims 2, 3, 5 and 6, which are therefore also not novel. D1 refers to roofing applications such as slates (page 3; lines 24 to 25). The subject-matter of claims 8 to 10 is therefore implicitly given in D1 as well. Furthermore D1 also discloses the embossing of the article by extrusion (page 15; line 8 and lines 19-20), which falls into the scope of dependent claims 23 and 24, which are therefore also not novel.

2.2. Documents D2 and D3 both disclose fibre cement composites useful in roofing applications comprising cement, fibres, aggregate and lightweight aggregate as well as additives such as pigments, waterproofing and viscosity modifying agents, which fall into the definition of independent claims 1, 7 and 22. Thus, the subject-matter of said claims is also not novel in view of documents D2 or D3:

3. Dependent claims 4, 11 to 16 as well as 25 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and / or inventive step, the reasons being as follows:

3.1. D4 discloses fibre reinforced cementitious compositions for roofing slates (page 1; lines 5 to 7) and refers to mixing fibres of different length (page 1; lines 54). It would therefore appear, that the skilled person starting from the teaching of D1 and seeking to further improve the elasticity of the resulting article takes account of D4 and would include a combination of short and long fibres to solve this problem. Thus the subject matter of claim 4 results in an obvious manner from the combination of D1 and D4 and is therefore not inventive.

3.2. D5 discloses usual thicknesses of roof tiles to be from 11.5 to 12.5 mm (page 1, lines 28 to 37). The feature of dependent claim 11 is therefore merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.

3.3. The document D1 is also regarded as being the closest prior art to the subject-matter of claims 11 to 16 and claim 25 (for the disclosure of D1 see point 2.1. above). The subject-matter of said claims differs from D1 in that a further reinforcing layer is embedded into or attached to the fibre reinforced cementitious composite.

However, it would appear, that the skilled person starting from the teaching of D1 and seeking to further increase resistance to cracking takes account of D6, which mentions this problem for thin fibre cement planks (paragraph [0011]) and would attach a reinforcing fixture such as a foil, a woven mesh or a polymer film (see D6: paragraph [0013]) to solve this problem. Thus the subject matter of claims 11 to

16 and 25 results from the combination of D1 and D6 in an obvious manner and is therefore not inventive.

Re Item VIII

Certain observations on the international application

The application does not meet the requirements of Article 6 PCT, because claims 1, 4, 7, 11, 16 and 20 to 22 are not clear.

- The term "about" used in claims 1, 7, 11, 21 and 22 is vague and unclear and leaves the reader in doubt as to the meaning of the technical features to which they refer, thereby rendering the definition of the subject-matter of said claims unclear, Article 6 PCT.
- The relative terms "long", "short" and "lower" used in claims 4, 16 and 20 have no well-recognised meaning and leave the reader in doubt as to the meaning of the technical features to which they refer, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT.
- The technical terms "inch", "pounds" and "°F" employed in claims 11 and on pages 3, 11, 14, 15, 17 and 18 are not generally accepted in the art, contrary to the requirements of Rule 10.1(e) PCT.
- Within the description multiple citations are "incorporated by reference", which is not allowable according to PCT-Guidelines II-4.17.
- The vague and imprecise statement in the description on page 18; paragraph [0088], last sentence implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.